

IN THE CLAIMS

Amendments To The Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1, 5, 6, 15, and 17 are amended.

Claims 18-34 are new.

Listing of Claims:

1. (Currently Amended) A temperature determining device, comprising:

a temperature detecting unit that detects a temperature of a determination object member based on an intensity of infrared rays from the object member;

a unit for determining a temperature for correction that determines a temperature of an opposing member opposed to the object member or a temperature of a member whose temperature changes in correlation to a change in the temperature of the opposing member; and

a calculating unit that corrects the detected temperature obtained by the temperature detecting unit using an environmental temperature around the temperature detecting unit and said temperature for correction,

wherein the calculating unit includes at least a unit that multiplies the detected temperature obtained by the temperature detecting unit by a coefficient that changes in relation to said temperature for correction.

2. (Previously Presented) The temperature determining device according to claim 1,

wherein the temperature detecting unit includes a thermopile that outputs a voltage corresponding to a temperature difference between a hot junction and a cold junction, and

the calculating unit corrects the detected temperature using a temperature of the cold junction of the thermopile as the environmental temperature.

3. (Previously Presented) The temperature determining device according to claim 1,
wherein the calculating unit corrects the detected temperature using a first temperature for correction determined by the unit for determining a temperature for correction at a predetermined point in time before a point in time when the temperature detecting unit detects a temperature and a second temperature for correction determined by the unit for determining a temperature for correction at the point in time when the temperature detecting unit detects the temperature.
4. (Original) The temperature determining device according to claim 3,
wherein the first temperature for correction is determined when heating of the object member is started.
5. (Currently Amended) A temperature correcting method, comprising:
a first step of detecting a temperature of a determination object member based on an intensity of infrared rays from the object member;
a second step of determining a temperature of an opposing member opposed to the object member or a temperature of a member whose temperature changes in correlation to a change in the temperature of the opposing member;
a third step of correcting the detected temperature obtained in the first step using an environmental temperature around a temperature detecting unit that detects said temperature of the object member; and
a fourth step of further correcting the detected temperature where the outcome of the third step is corrected based on a function of the temperature for correction obtained in the second step,
wherein the fourth step includes at least a step of multiplying the detected temperature by a coefficient that changes in relation to the temperature for correction, wherein the temperature for correction is obtained in the second step.

6. (Currently Amended) An image forming apparatus comprising a fixing unit that allows a toner image transferred on a transferring material to be fixed on the transferring material by heating the toner image under pressure,

wherein the fixing unit comprises:

a fixing member that is brought into contact with the transferring material so as to heat the transferring material;

a heating source that heats the fixing member directly or indirectly;

a temperature detecting unit that detects a surface temperature of the fixing member based on an intensity of infrared rays from the fixing member;

a unit for determining a temperature for correction that determines a temperature of a constituent member of the fixing unit opposed to the fixing member or a temperature of a member whose temperature changes in correlation to a change in the temperature of the constituent member; and

a calculating unit that corrects the detected temperature obtained by the temperature detecting unit using an environmental temperature around the temperature detecting unit and said temperature for correction,

wherein the calculating unit includes at least a unit that multiplies the detected temperature obtained by the temperature detecting unit by a coefficient that changes in relation to said temperature for correction.

7. (Original) The image forming apparatus according to claim 6,
wherein the fixing member is an open-ended tube or an endless belt.

8. (Original) The image forming apparatus according to claim 6,
wherein the fixing member has a thickness of 0.02 mm to 0.6 mm.

9. (Original) The image forming apparatus according to claim 6,
wherein a face of the fixing member opposed to the temperature detecting unit is a curved surface concave toward a side of the temperature detecting unit.

10. (Original) The image forming apparatus according to claim 6,
wherein a face of the fixing member opposed to the temperature detecting unit has a surface roughness Ra of not more than 0.2 μm .
11. (Original) The image forming apparatus according to claim 6,
wherein the unit for determining a temperature for correction determines a temperature of a member in the fixing unit opposed to the fixing member.
12. (Original) The image forming apparatus according to claim 6,
wherein the temperature detecting unit includes a thermopile that outputs a voltage corresponding to a temperature difference between a hot junction and a cold junction, and
the unit for determining a temperature for correction determines a temperature of the cold junction of the thermopile.
13. (Original) The image forming apparatus according to claim 12,
wherein the calculating unit corrects the detected temperature using a first temperature for correction determined by the unit for determining a temperature for correction at a predetermined point in time before a point in time when the temperature detecting unit detects a temperature and a second temperature for correction determined by the unit for determining a temperature for correction at the point in time when the temperature detecting unit detects the temperature.
14. (Original) The image forming apparatus according to claim 13,
wherein the first temperature for correction is determined when heating is started by the heating source.
15. (Currently amended) The temperature determining device according to claim 1,

wherein the calculating unit includes at least a unit that adds to the detected temperature a temperature obtained by multiplying ~~multiplies~~ the detected temperature, after said detected temperature has been corrected based on a function of the environmental temperature, by a coefficient that is not negative and changes in relation to said temperature for correction.

16. (Previously presented) The temperature determining device according to claim 2, wherein the unit for determining a temperature for correction determines the temperature of the cold junction of the thermopile.

17. (Currently amended) The temperature correcting method according to claim 5, wherein the fourth step includes at least a step of adding to the detected temperature a temperature obtained by multiplying the detected temperature by a coefficient that is not negative and changes in relation to the temperature for correction; ~~wherein the temperature for correction is obtained in the second step.~~

18. (New) The temperature determining device according to claim 1, wherein the coefficient is expressed by a function that decreases monotonically as the temperature for correction increases.

19. (New) The temperature correcting method according to claim 5, wherein the coefficient is expressed by a function that decreases monotonically as the temperature for correction increases.

20. (New) A temperature determining device, comprising:
a temperature detecting unit that detects a temperature of a determination object member based on an intensity of infrared rays from the object member;
a unit for determining a temperature for correction that determines a temperature of an opposing member opposed to the object member or a temperature of a member

whose temperature changes in correlation to a change in the temperature of the opposing member; and

a calculating unit that corrects the detected temperature obtained by the temperature detecting unit using an environmental temperature around the temperature detecting unit and said temperature for correction,

wherein the calculating unit includes at least a unit that adds to the detected temperature a correction amount that decreases as the temperature for correction increases, after said detected temperature has been corrected based on a function of the environmental temperature.

21. (New) The temperature determining device according to claim 20,

wherein the temperature detecting unit includes a thermopile that outputs a voltage corresponding to a temperature difference between a hot junction and a cold junction, and

the calculating unit corrects the detected temperature using a temperature of the cold junction of the thermopile as the environmental temperature.

22. (New) The temperature determining device according to claim 20,

wherein the calculating unit corrects the detected temperature using a first temperature for correction determined by the unit for determining a temperature for correction at a predetermined point in time before a point in time when the temperature detecting unit detects a temperature and a second temperature for correction determined by the unit for determining a temperature for correction at the point in time when the temperature detecting unit detects the temperature.

23. (New) The temperature determining device according to claim 22,

wherein the first temperature for correction is determined when heating of the object member is started.

24. (New) A temperature correcting method, comprising:

a first step of detecting a temperature of a determination object member based on an intensity of infrared rays from the object member;

a second step of determining a temperature of an opposing member opposed to the object member or a temperature of a member whose temperature changes in correlation to a change in the temperature of the opposing member;

a third step of further correcting the detected temperature obtained in the first step using an environmental temperature around a temperature detecting unit that detects said temperature of the object member; and

a fourth step of further correcting the detected temperature where the outcome of the third step is corrected based on a function of the temperature for correction obtained in the second step,

wherein the fourth step includes at least a step of adding to the detected temperature a correction amount that decreases as the temperature for correction increases, after said detected temperature has been corrected in the third step.

25. (New) An image forming apparatus comprising a fixing unit that allows a toner image transferred on a transferring material to be fixed on the transferring material by heating the toner image under pressure,

wherein the fixing unit comprises:

a fixing member that is brought into contact with the transferring material so as to heat the transferring material;

a heating source that heats the fixing member directly or indirectly;

a temperature detecting unit that detects a surface temperature of the fixing member based on an intensity of infrared rays from the fixing member;

a unit for determining a temperature for correction that determines a temperature of a constituent member of the fixing unit opposed to the fixing member or a temperature of a member whose temperature changes in correlation to a change in the temperature of the constituent member;

and

a calculating unit that corrects the detected temperature obtained by the temperature detecting unit using an environmental temperature around the temperature detecting unit and said temperature for correction,

wherein the calculating unit includes at least a unit that adds to the detected temperature a correction amount that decreases as the temperature for correction increases, after said detected temperature has been corrected based on a function of the environmental temperature.

26. (New) The image forming apparatus according to claim 25,
wherein the fixing member is an open-ended tube or an endless belt.
27. (New) The image forming apparatus according to claim 25,
wherein the fixing member has a thickness of 0.02 mm to 0.6 mm.
28. (New) The image forming apparatus according to claim 25,
wherein a face of the fixing member opposed to the temperature detecting unit is a curved surface concave toward a side of the temperature detecting unit.
29. (New) The image forming apparatus according to claim 25,
wherein a face of the fixing member opposed to the temperature detecting unit has a surface roughness Ra of not more than 0.2 μm .
30. (New) The image forming apparatus according to claim 25,
wherein the unit for determining a temperature for correction determines a temperature of the member in the fixing unit opposed to the fixing member.
31. (New) The image forming apparatus according to claim 25,
wherein the temperature detecting unit includes a thermopile that outputs a voltage corresponding to a temperature difference between a hot junction and a cold junction, and

the unit for determining a temperature for correction determines a temperature of the cold junction of the thermopile.

32. (New) The image forming apparatus according to claim 31,
wherein the calculating unit corrects the detected temperature using a first temperature for correction determined by the unit for determining a temperature for correction at a predetermined point in time before a point in time when the temperature detecting unit detects a temperature and a second temperature for correction determined by the unit for determining a temperature for correction at the point in time when the temperature detecting unit detects temperature.
33. (New) The image forming apparatus according to claim 32,
wherein the first temperature for correction is determined when heating is started by the heating source.
34. (New) The temperature determining device according to claim 21,
wherein the unit for determining a temperature for correction determines the temperature of the cold junction of the thermopile.